Provide Aerospace Products and Capabilities Crosscutting Process

Mission

The Provide Aerospace Products and Capabilities (PAPAC) process is the means by which NASA's Strategic Enterprises and their Centers deliver systems (ground, aeronautics, space), technologies, data, and operational services to NASA customers. Through the use of Agency facilities, customers can conduct research, explore and develop space, and improve life on Earth. This process is used to answer the Agency's fundamental question: "What cutting-edge technologies, processes, techniques, and engineering capabilities must we develop to implement our research agenda in the most productive, economical, and timely manner?" PAPAC helps to assure that NASA strategically utilizes public resources in an efficient and effective means such that the public benefit is maximized.

Implementation Strategy

The goal of this process is to enable NASA's Strategic Enterprises and their Centers to deliver products and services to customers more effectively and efficiently. The process is also used to enable the Communicate Knowledge process to extend the technology, research, and science benefits from NASA programs broadly to the public and commercial sectors. Several of the objectives and targets address the NASA Integrated Action Team (NIAT) report actions.

Performance Measures

Goal: Enable NASA's Strategic Enterprises and their Centers to deliver products and services to customers more effectively and efficiently.

Objective - Enhance Program safety and mission success in the delivery of products and operational services.

Public Benefit: NASA's role in the advancement of research and technology is conducted through the construction and operation of facilities such as telescopes, satellites, and ground-based laboratories and test facilities. This element affects the effectiveness and efficiency with which NASA's Strategic Enterprises and Centers serve their customers.

Annual Performance Goal 2P1: Meet schedule and cost commitments by keeping development and upgrade of major scientific facilities and capital assets within 110% of cost and schedule estimates, on average.

- Development schedule and cost data are drawn from NASA budget documentation for major programs and projects to calculate the average performance measures.

Annual Performance Goal 2P2: Track the availability of NASA's spacecraft and major ground facilities by keeping the operating time lost due to unscheduled downtime to less than 10% of scheduled operating time.

- Each field center reports the operational downtime of the major spacecraft and ground facilities.

Objective - Improve NASA's engineering capability to remain as a premier engineering research and development organization

Public Benefit: NASA's ability to improve and maintain engineering capabilities results in more efficient processes and reduced cost.

Annual Performance Goal 2P3: Strengthen the NASA engineering capability through the completion of two indicators in FY 2002.

- Complete an assessment to identify a suitable systems engineering standard for NASA. Document the standard in the appropriate NASA system (ex. NASA Procedures and Guidelines (NPG)).
- Conduct an assessment of the systems engineering capability based upon the identified systems engineering standard (NPG) to identify target areas for improvement.

Objective - Capture engineering and technological best practices and process knowledge to continuously improve NASA's program/project management

Public Benefit: NASA's improvements in program and project management yields an increased number of successful missions within budget, an increase of information to the public, more technological breakthroughs, and more discoveries about our planet and universe.

Annual Performance Goal 2P4: Improve program and project management through the completion of two of the three indicators in FY 2002.

- Benchmark high-tech, successful commercial companies and government organizations and apply the results to revise NASA's program project management.
- Increase the number of program and project managers completing the Advanced Program Management Training compared to the number that completed the training in FY 2001.
- Complete the incorporation of NIAT actions into NASA policy.

Annual Performance Goal 2P5: Capture a set of best practices/lessons learned from each Program, to include at least one from each of the four PAPAC subprocesses, commensurate with current program status.

- Lessons learned from the PAPAC subprocesses are collected and utilized in process improvement and project and program training by the Program Management Council Working Group (PMCWG) and Code FT (Training and Development Division).

Objective - Facilitate technology insertion and transfer, and utilize commercial partnerships in research and development to the maximum extent practicable

Public Benefit: The percentage of NASA's R&D budget dedicated to commercial partnerships affects integrated technology planning and development with NASA partners. This reduces the taxpayer cost while increasing products and services to the consumer.

Annual Performance Goal 2P6: Dedicate 10 to 20 percent of the Agency's Research & Development budget to commercial partnerships.

- Each of the Enterprises reports contribution to commercial partnerships.

Verification and Validation

Data will be verified by collaborating with the Enterprises and Centers, and during the Quarterly Status Reviews and monthly status reports.

Data will be validated by various independent assessments of program/project activity, and the review of several Center and Agency databases.

MULTI-YEAR PERFORMANCE TREND

Provide Aerospace Products and Capabilities (PAPAC)

Enhance Program safety and mission success in the delivery of products and operational services.

	FY 1999	FY 2000	FY 2001	FY 2002
Annual Performance Goal and Goal #	P1: Meet schedule and cost commitments by keeping development and upgrade of major scientific facilities and capital assets within 110% of cost and schedule estimates, on average.	0P1: Meet schedule and cost commitments by keeping development and upgrade of major scientific facilities and capital assets within 110% of cost and schedule estimates, on average.	1P1: Meet schedule and cost commitments by keeping development and upgrade of major scientific facilities and capital assets within 110% of cost and schedule estimates, on average.	2P1: Meet schedule and cost commitments by keeping development and upgrade of major scientific facilities and capital assets within 110% of cost and schedule estimates, on average.
Assessment	Green	Red	TBD	TBD
Annual Performance Goal and Goal #	P2: Set up process to determine, on average, the operating time of NASA's spacecraft and ground facilities lost to unscheduled downtime. Establish a baseline in FY99.	0P2: Ensure the availability of NASA's spacecraft and facilities by decreasing the downtime relative to FY1999 spacecraft and facility performance.	1P3: Ensure the availability of NASA's spacecraft and major ground facilities by keeping the operating time lost due to unscheduled downtime to less than 10% of scheduled operating time.	2P2: Track the availability of NASA's spacecraft and major ground facilities by keeping the operating time lost due to unscheduled downtime to less than 10% of scheduled operating time.
Assessment	Green	Blue	TBD	TBD
Annual Performance Goal and Goal #			Develop and approve NASA policy for Software Independent Verification and Validation, and conduct an evaluation of projects for its application through achievement of three indicators. (1P7)	
Assessment			TBD	

Improve NASA's engineering capability to remain as a premier engineering research and development organization

	FY 1999	FY 2000	FY 2001	FY 2002
Annual Performance Goal and Goal #	P8: Set up process to improve engineering skills and tools within the Agency.			2P3: Strengthen the NASA engineering capability through the completion of two indicators in FY02.
Assessment	Yellow			TBD

Capture engineering and technological best practices and process knowledge to continuously improve NASA's program/project management

Annual Performance Goal and Goal #				2P4: Improve program and project management through the completion of two of three indicators in FY02.
Assessment				TBD
Annual Performance Goal and Goal #	P5: Set up a process in FY99 to capture a set of best practices/lessons learned from each Program, to include at least one from each of the four PAPAC subprocesses, commensurate with current program status.	0P5: Capture a set of best practices/lessons learned from each Program, to include at least one from each of the four PAPAC subprocesses, commensurate with current program status. Inputs will be used in PAPAC process improvement and in Program/Project Management training.	1P4: Capture a set of best practices/lessons learned from each Program, to include at least one from each of the four PAPAC subprocesses, commensurate with current program status. Inputs will be used in PAPAC process improvement and in Program/Project Management training.	2P5: Capture a set of best practices/lessons learned from each Program, to include at least one from each of the four PAPAC subprocesses, commensurate with current program status.
Assessment	Green	Yellow	TBD	TBD

Facilitate technology insertion and transfer, and utilize commercial partnerships in research and development to the maximum extent practicable

	FY 1999	FY 2000	FY 2001	FY 2002
Annual Performance Goal and Goal #	P6: Set up a process to determine percent of Agency's R & D budget dedicated to commercial partnerships and establish a baseline.	0P6: Dedicate the percentage of the Agency's R&D budget that is established in the FY00 process to commercial partnerships.	1P5:Dedicate 10 to 20 percent of the Agency's Research & Development budget to commercial partnerships.	2P6: Dedicate 10 to 20 percent of the Agency's Research & Development budget to commercial partnerships.
Assessment	Green	Blue	TBD	TBD

Enable technology planning, development, and integration driven by Strategic Enterprise customer needs

Annual Performance Goal and Goal #	P7: Set up a data collection process to determine the amount of leveraging of the R and D budget with activities of other organizations. Establish a baseline in FY99.	0P7:Increase the amount of leveraging of the technology budget with activities of other organizations, relative to the FY99 baseline that is established during process development.	1P6: Complete redefinition of the NASA Technology Plan to emphasize investments in the emerging strategic cross-Enterprise technology areas & include roadmaps for each Enterprise to show how Enterprise technology investments are linked to future mission needs.	
Assessment	Green	Green	TBD	

Provide Aerospace Products and Capabilities (PAPAC)	Budget Category	Space Science	Earth Science	Biological and Physical Research	HEDS	Aero-Space Technology	Research & Program Management
Annual Performance Goal and APG#							
Meet schedule and cost commitments by keeping development and upgrade of major scientific facilities and capital assets within 110% of cost and schedule estimates, on average. (2P1)		X	X	X	X	X	
Track the availability of NASA's spacecraft and major ground facilities by keeping the operating time lost due to unscheduled downtime to less than 10% of scheduled operating time. (2P2)		X	X	X	X	X	X
Strengthen the NASA engineering capability through the completion of two indicators in FY02. (2P3)							X
Improve program and project management through the completion of two of three indicators in FY02. (2P4)							X
Capture a set of best practices/lessons learned from each Program, to include at least one from each of the four PAPAC subprocesses, commensurate with current program status. (2P5)		X	X	X	X	X	X
Dedicate 10 to 20 percent of the Agency's Research & Development budget to commercial partnerships. (2P6)		X	X	X	X	X	